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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,718	09/29/2003	Yuichi Ogawa	500.43154X00	9914
24956 7590 11/01/2007 MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C. 1800 DIAGONAL ROAD SUITE 370 ALEXANDRIA, VA 22314			EXAMINER KIM, PAUL	
			ART UNIT 2161	PAPER NUMBER
			MAIL DATE 11/01/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/671,718

Applicant(s)

OGAWA ET AL.

Examiner

Paul Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.138(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6,7,9,10,12-16,18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-4,6-7,9-10,12-16,18 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

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### **DETAILED ACTION**

1. This Office action is responsive to the following communication: Request for Continued Examination filed on 2 August 2007.
2. Claims 1, 3-4, 6-7, 9-10, 12-16, and 18-19 are pending and present for examination. Claims 1, 3, 6, 7, 10, 16, and 18 are in independent form.

#### ***Continued Examination Under 37 CFR 1.114***

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2 August 2007 has been entered.

#### ***Response to Amendment***

4. Claims 1, 3, 6, 7, 10, 13, 15, 16, and 18 have been amended.
5. No claims have been added.
6. No claims have been cancelled.

#### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claims 1, 3-4, 6-7, 9-10, 16, and 18-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Numata (U.S. Patent No. 5,943,669, hereinafter referred to as NUMATA), filed on 21 November 1997, and issued on 24 August 1999.

9. **As per independent claims 1, 3, 6, 7, 10, 16, and 18**, NUMATA discloses:

A document search method for finding a document relevant to a search condition from object documents as search objects, comprising the steps of:

acquiring a seed text which is inputted as the search condition {See NUMATA, C33:L11-16, wherein this reads over "a query is first input by means of query input section 28"};

partitioning the object document into a plurality of blocks {See NUMATA, C5:L42-59, wherein this reads over "[f]undamental vector generation section 4 partitions the logical structure of the documents that were analyzed in logical structure analysis section 4 by means of the classification units that were designated by classification unit designation section 2"};

calculating similarity of each block of the object document to the seed text {See NUMATA, C33:L22-27, wherein this reads over "the comparison of the query vector and the composite vectors is performed"};

judging whether or not the calculated similarity of each block satisfies a predetermined condition;

calculating a similarity of the object document as a whole to the seed text, based on the calculated similarity of each block to the seed text {See NUMATA, C2:L56-66, wherein this reads over "the degree of similarity between the query and chapter headings, as well as the degree of similarity between the query and paragraphs, are calculated respectively"};

calculating, as an inclusion degree, a ratio of blocks that are judged as satisfying said predetermined condition to the whole of the plurality of blocks of the object document {See NUMATA, C1:L39-54, wherein this reads over "[t]he degree of similarity between the query and the document"}; and

outputting a list of information of object documents in association with the inclusion degree of each listed object document and with the similarity of each listed object document as a whole to the seed text {See NUMATA, C33:L17-27, wherein this reads over "the comparison of the query vector and the composite vectors is performed (step S44 of FIG. 17) and is displayed on display section 31 along with the structural elements of the corresponding retrieval units in descending order of the degree of similarity between the composite vectors and the query vector"}.

10. **As per dependent claims 2, 5, 8, 11, 17, and 20**, the Examiner notes that the method step of "outputting the inclusion degree and the similarity" would be inherent to the claimed invention in that when a calculation is made, a result is necessarily outputted. Additionally, wherein the calculations for

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the similarity and the inclusion degree both take into account the object document, it is inherent that the similarity and the inclusion degree will be associated with each other.

**11. As per dependent claim 4, 9, and 19, NUMATA discloses:**

The document search device according to claim 3, further comprising:

- a full-text search condition acquisition module which acquires a full-text search condition to be used for a full-text search of the object documents {See NUMATA, C33:L11-16, wherein this reads over "a query is first input by means of query input section 28"};
- a full-text search condition analysis module which analyzes the acquired full-text search condition {See NUMATA, C17:L20-28, wherein this reads over "a query vector generation section"}; and
- a full-text search condition relevancy calculation module which, on the analyzed full-text search condition, calculates, as a full-text search condition relevancy, a ratio of a number of relevant min terms satisfied by characteristic strings of said each block to a number of total min terms included in the full-text search condition {See NUMATA, C33:L22-27, wherein this reads over "the comparison of the query vector and the composite vectors is performed"}, wherein:
  - the inclusion degree calculation module judges whether or not the calculated similarity satisfies the first predetermined condition and whether or not the calculated full-text search condition relevancy satisfies a second predetermined condition, and calculates, as the inclusion degree, a ratio of blocks that are judged to satisfy the first and second predetermined conditions to the whole of the object document {See NUMATA, C1:L39-54, wherein this reads over "[t]he degree of similarity between the query and the document"}.

**12. Claims 12-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over NUMATA further in view of Caudill et al (U.S. Patent No. 6,766,316, hereinafter referred to as CAUDILL), filed on 18 January 2001, published on 12 September 2002, and issued on 20 July 2004.

**13. As per dependent claim 12, NUMATA, in combination with CAUDILL, discloses:**

The document search method according to claim 1, further comprising the steps of:

- extracting character strings from the acquired seed text {See CAUDILL, C10:L53-56, wherein this reads over "an input query 118 is sent to the ontological parser 122. Fourth, the ontological parser 122 parses the input query 118 and generates one or more predicate structures"}; and
- extracting character strings from the block of the object document {See CAUDILL, C10:L40-44, wherein this reads over "the ontological parser 122 parses each document 120 and generates one or more predicate structures for each sentence in the document"}, wherein:

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the similarity of each block of the object document to the seed text is calculated by comparing the character strings extracted from each block with the character strings extracted from the seed text {See CAUDILL, C10:L59-64, wherein this reads over "a query predicate library (representing an input query 118) and a set of document predicate libraries (representing a set of documents 120) are sent to the relevancy ranking component 128 to compare the similarity level between an input query 118 and the document 120"}.

While NUMATA may fail to expressly disclose the extraction of character strings, CAUDILL discloses the generation of predict structures which require the extraction of character strings.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by NUMATA by combining it with the invention as disclosed by CAUDILL.

One of ordinary skill in the art would have been motivated to do this modification in order to extract character strings for use in the calculation of similarity between blocks of an object document and a query.

14. **As per dependent claim 13**, NUMATA, in combination with CAUDILL, discloses:

The document search method according to claim 12, further comprising the steps of:

regarding each block as a relevant block to the seed text in response to the calculated similarity of the block being higher than a preset value {See CAUDILL, C13:L11-17, wherein this reads over "the predicate structure matching component determines a matching degree between two predicate structures" and "[i]f they match exactly, the result is returned to the user"};

counting the number of blocks judged as the relevant blocks {See Figures 8 and 13-16};  
and

storing the counted number of relevant blocks {See CAUDILL, C23:L23-38}.

15. **As per dependent claim 14**, NUMATA, in combination with CAUDILL, discloses:

The document search method according to claim 13, wherein the total number of blocks included in the object document is calculated, and the inclusion degree is calculated from a ratio of the calculated total number of blocks to the stored counted number of relevant blocks {See CAUDILL, C10:L14-17, wherein this reads over "[t]he relevance of a document to a user's query is determined by calculating the similarity coefficient, based on the structures of each pair of query predicates and document predicates"}.

16. **As per dependent claim 15**, NUMATA, in combination with CAUDILL, discloses:

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The document search device according to claim 4, further comprising a characteristic string extraction module which extracts characteristic strings from the seed text, wherein:

the characteristic string extraction module extracts characteristic strings also from each block of the object document {See CAUDILL, C7:L30-45, wherein this reads over "[t]he document vectorization unit 130 converts the set of predicate structures derived from ontologically parsing a document into one or more large-dimensioned numerical vectors"},

the similarity calculation module calculates the similarity of each block by comparing the characteristic strings extracted from the block with the characteristic strings extracted from the seed text {See CAUDILL, C10:L59-64, wherein this reads over "a query predicate library (representing an input query 118) and a set of document predicate libraries (representing a set of documents 120) are sent to the relevancy ranking component 128 to compare the similarity level between an input query 118 and the document 120"}, and

the inclusion degree calculation module

regards each block as a relevant block in response to the similarity of the block being higher than a preset value and the full-text search condition relevancy of the block being higher than a preset value {See CAUDILL, C13:L11-17, wherein this reads over "the predicate structure matching component determines a matching degree between two predicate structures" and "[i]f they match exactly, the result is returned to the user"},

counts the number of the relevant blocks included in the object document {See Figures 8 and 13-16}, and

calculates the inclusion degree of the object document by use of the counted number of relevant blocks and the total number of blocks included in the object document {See CAUDILL, C23:L23-38}.

### ***Response to Arguments***

17. Applicant's arguments with respect to claims 1, 3-4, 6-7, 9-10, 12-16, and 18-19 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

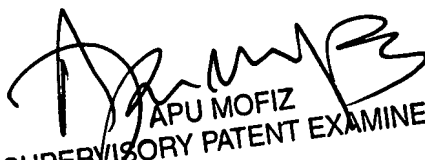
18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Kim whose telephone number is (571) 272-2737. The examiner can normally be reached on M-F, 9am - 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Apu Mofiz can be reached on (571) 272-4080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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SUPERVISORY PATENT EXAMINER